What is claimed is:

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1. A clamping apparatus comprising:

a driving means (15) provided within a housing (11);

a pull rod (12) having an axis and being reciprocally moved in the axial direction by the driving means (15);

a tapered outer peripheral surface (12a) provided on the pull rod (12) so as to narrow toward a first end of the axial direction;

an engaging member (14) arranged in an outer peripheral space of the tapered outer peripheral surface (12a) so as to be inserted into an engaging hole (2) of an object (1) to be fixed; and

a support means (29) inhibiting the engaging member (14) from displacing to the first end of the axial direction with a predetermined supporting force and allowing the engaging member (14) to displace to the first end with a force larger than the supporting force,

the pull rod (12), when driven toward the first end, making the tapered outer peripheral surface (12a) change over the engaging member (14) to an engaging position (X) far away from the axis so as to engage it with the engaging hole (2) and displacing the engaging member (14) to the first end against the support means (29), thereby adapting a driving force of the pull rod (12) to be transmissible to the object (1) to be fixed,

and on the other hand, when driven toward a second end of the axial direction, the pull rod (12) allowing the engaging member (14) to change over to a disengaging position (Y) close to the axis.

2. A clamping apparatus as set forth in claim 1, wherein an annular member (13) is externally fitted onto the pull rod (12) movably in the axial direction and has a peripheral wall provided with the engaging member (14).

- 3. A clamping apparatus as set forth in claim 2, wherein the annular member comprises a collet (13), the collet (13) having a peripheral wall which forms the engaging member (14).
- 4. A clamping apparatus as set forth in claim 2, wherein the pull rod (12) is connected to the driving means (15) so as to be radially movable and an annular gap (31) is defined between the housing (11) and an outer peripheral surface of the annular member (13).
- 5. A clamping apparatus as set forth in claim 2, 10 . wherein an annular gap (31) is /defined between the housing (11) and an outer peripheral surface of the annular member (13), annular the gap (31) communicated with a cleaning Vfluid supply port (40) provided in the housing (1/1).
  - 6. A clamping apparatus/as set forth in claim 1, wherein the support means (29) comprises a push spring (27) urging the engaging member (14) toward the second end of the axial direction/.
  - 7. A clamping apparatus/as set forth in claim 1, wherein the housing (11) is detachably provided with an adapter block (22) for/receiving the object (1) to be fixed, the pull rod (1/2) being inserted into the adapter block (22) movably in/the axial direction.
  - 8. A clamping apparatus as set forth in claim 7, wherein the pull rof (12) is detachably connected to the driving means (15)
  - 9. A clamping apparatus as set forth in claim 1, wherein the housing (11) includes a lift member (51) arranged movably in the axial direction, the lift member (51) being provided with the driving means (15) and the pull rod (12).
  - A clamping apparatus as set forth in claim 2, wherein the support means (29) comprises a push spring (27) urging the engaging member (14) toward the second

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end of the axial direction.

- 11. A clamping apparatus as set forth in claim 2, wherein the housing (11) is detachably provided with an adapter block (22) for receiving the object (1) to be fixed, the pull rod (12) being inserted into the adapter block (22) movably in the axial direction.
- 12. A clamping apparatus as set forth in claim 3, wherein the support means (29) comprises a push spring (27) urging the engaging member (14) toward the second end of the axial direction.
- 13. A clamping apparatus as set forth in claim 3, wherein the housing (11) is detachably provided with an adapter block (22) for receiving the object (1) to be fixed, the pull rod (12) being inserted into the adapter block (22) movably in the axial direction.

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